REMARKS

Reconsideration of this application, as presently amended, is respectfully requested. Claims 1-8 are now pending in the present application, new claim 8 having been added by the present Amendment. Claims 1-4, 6 and 7 stand rejected. Claim 5 was objected to as being dependent upon a rejected claim, but was indicated allowable if rewritten in independent form. The rejections set forth in the Office Action are respectfully traversed below.

Change to the Drawings:

Fig. 14 has been amended hereby to change reference element "15a" to "16". Element 16 is a condenser lens for focusing the reflected light from the aperture mirror 15 onto a light receiving element 13. The condenser lens 16 and aperture 15a are clearly shown, e.g., in Fig. 2 of the drawings wherein it can clearly be seen that the element in Fig. 14 corresponds to the condenser lens 16, and not the aperture 15a.

Approval and entry of the change to the drawings is respectfully requested.

Claim Rejections – 35 U.S.C. §102 and 35 USC §103

Claims 1 – 2 were rejected under 35 U.S.C. §102(b) as being anticipated by **Caswell et al.** (USP 4,762,990). Claims 3 – 4 were rejected under 35 U.S.C. §103(a) as being unpatentable over **Caswell et al.** Claim 6 was rejected under 35 U.S.C. §102(e) as being anticipated by EP 0897161 (previously cited). Claim 7 was rejected under 35 U.S.C. §103(a) as being unpatentable over **Caswell et al.** in view of **Brandt** (USP 5, 438,446 and previously cited).

Caswell et al. disclose a system for determining the coordinates of a user positioned object (e.g., a stylus) in a work space based on a localized change in light level (see, e.g., col. 2, line 63 – col. 3, line 5). More particularly, the **Caswell et al.** system includes a laser light source 6 and a rotating mirror 2 that form a sweeping light source to sweep light over a work area 1. A directly reflecting member 4, such as a mirror, and retroreflecting material 5, such as a beaded glass strip, border the work area 1. The reflecting members 4, 5 in combination with the sweeping light source produce a background light level against which variations in light level may be sensed. The light level and any variations of the light level are deflected by a partially silvered mirror 7 to a focusing lens 8 that collects and focuses light on a photocell 9. See Fig. 1 and column 3, lines 11-58.

Of particular relevance is the embodiment shown in Fig. 9 of **Caswell et al.** Fig. 9 illustrates an embodiment of **Caswell et al.** wherein the partially silvered mirror 7 is eliminated and the focusing lens 8 is provided with a hole 31 or other non-focusing region, and arranged such that light from the laser 6 passes through the hole 31 to the rotating mirror 2. Light reflected from the rotating mirror 2 is focused by the curved portion of the lens 8 on the photocell 9. See column 6, line 67 – column 7, line 4.

The Examiner considers the focusing lens 8 shown in Fig. 9 to correspond to the claimed *deflecting unit having an asymmetrical shape about an optical axis*. Further, because the hole 31 in the focusing lens 8 is only on the left side of the focusing lens 8, as shown in Fig. 9, the Examiner apparently considers this feature to make the lens 8 asymmetrical with respect to its own optical axis.

Claim 1 has been amended to recite "a *mirrored* deflecting unit." Support for this change is provided on page 16, lines 10-15 of the present application, which describe the aperture mirror 15 as having a mirror finish. In contrast, the focusing lens 31 of **Caswell et al.**, which the Examiner considers to correspond to the deflecting unit, is clearly not mirrored.

In view of the above amendments and remarks, it is respectfully submitted that claim 1 patentabily distinguishes over the prior art and defines allowable subject matter. Claim 2, which depends from claim 1, is allowable for the same reasons as claim 1 by virtue of its dependency on claim 1.

Claims 3 and 4

Claim 3 depends from claim 1 and claim 4 depends from claim 3. Therefore, claims 3 and 4 are allowable for the same reasons as claim 1 by virtue of their dependency on claim 1. Further, claims 3 and 4 also distinguish over the cited prior art for additional reasons.

First, the Examiner asserts that it would be obvious to change the shape of the focusing lens 31 of **Caswell et al.** (considered by the Examiner to be a deflecting unit) such that it is asymmetrical in a height direction. However, changing the shape of the focusing lens 31 such that it is asymmetrical in a height direction would change or destroy its ability to focus received light on the photocell 9. In other words, there is no incentive or motivation, as required under §103, to change the shape of the focusing lens such that it is asymmetric in the height direction.

Second, the Examiner's rejections of claims 3 and 4 are based on incorrect interpretation of case law. The Examiner asserts that a change in size/shape is recognized as being within the

level of ordinary skill in the art, and cites cases in support of this position. However, contrary to the Examiner's assertion, a change in size or shape may or may not be obvious under §103 *depending on the effect of the change in size or shape.*

For example, in *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), *cert. denied*, 469 U.S. 830, 225 USPQ 232 (1984), the Federal Circuit held that, where the *only difference* between the prior art and the claims was a recitation of relative dimensions of the claimed device ***and*** a device having the claimed relative dimensions *would not perform differently* than the prior art device, the claimed device was not patentably distinct from the prior art device.

In accordance with the presently claimed invention, the change in size and/or shape of the deflecting unit clearly results in performance that is different from the prior art. For example, as set forth on page 14, lines 21-25 of the present application, designing the shape of the deflecting unit (aperture mirror) such that it is asymmetrical in the height direction is preferable in creating a large light receiving area. Thus, the claimed invention (claims 3 and 4) clearly performs differently from the **Caswell et al.** device and is patentably distinct from the **Caswell et al.** device.

Rejection of Claim 6 under 35 U.S.C. §102

The Examiner has again reiterated the rejection of claim 6 in view of EP 0897161. However, in this rejection, the Examiner relies on drawing Fig. 3 and provides a handwritten drawing attached to the Office Action in support of the rejection.

The Examiner's handwritten drawing attached to the Office Action distorts the scanning start angle δ in order to make the drawing fit the equation $d/2 + w < D\tan\delta$. In other words, by making the scanning start angle δ large, $D\tan\delta$ is large and fulfills the equation. This is improper under §102. Under §102, the Examiner must find all elements of the claim either expressly or inherently in the prior art reference. The Examiner cannot supply dimensions or sizes of angles herself.

Fig. 3 of EP 0879161, as discussed in paragraphs [0050] to [0056], shows that a half mirror 15a and a prism mirror 17a of the light send/receive unit 1a is positioned in the housing 10a, specifically, outside of reference line (connecting the polygon mirror 16a and 16b which are positioned in the light send/receive unit 1a and 1b respectively) and at the angle θ with respect to a reference line, so as to solve a problem that scanning light from the polygon mirror 16a is shielded by the half mirror 15a and the prism mirror 17a and thus sufficient scanning cannot be performed in the direction of the display screen 10 (a copy of Fig. 3 is attached showing the above).

On the other hand, according to embodiments of the present invention (e.g., as shown in Fig. 14) the angle δ of the present invention is defined for the following, as explained in the attached Fig. 14 of the present application. For the structure of size w of the aperture mirror 15 and the width d of the aperture 15a and so on, in the case where D represents the distance from the aperture mirror 15 to the polygon mirror 14, the angle δ between the optical axis of the beam having the width d and the optical axis of the start of scanning (SP) are defined to satisfy the condition $d/2 + w < D\tan\delta$.

To the contrary, any description or teaching for the above mentioned "Dtanδ" is not found in Fig. 3 and the specification of EP0879161. Thus, it is clearly different from claim 6 of the present invention.

Moreover, it is noted that the scan start angle δ is not specified in Fig. 3 of EP 0897161. Moreover, the dimensions of the beam width d, and the width w of the deflecting unit are also not clearly specified. The Examiner is relying on *only* the drawing figures to teach the claimed relationship $d/2 + w < D\tan\delta$. However, as set forth in the Manual of Patent Examining Procedure MPEP §2125, *drawings can anticipate claims only if they clearly show the structure which is claimed.*

Accordingly, reconsideration and withdrawal of the rejection of claim 6 under §102 are respectfully requested.

Rejection of Claim 7 under §103

The Office Action asserts that **Caswell et al.** disclose all features recited in claim 7, except for *the optical scanning unit provided with a protective film having a maximum reflectance at an angle of incidence corresponding to a scanning angle at which a quantity of reflected light is minimum.*

However, it is respectfully submitted that **Brandt** does not disclose or suggest *the optical scanning unit provided with a protective film having a maximum reflectance at an angle of incidence corresponding to a scanning angle at which a quantity of reflected light is minimum.*

Therefore, even if the references are combined, **Brandt** does not alleviate the deficiencies of **Caswell et al.** and the combination does not result in the claimed invention.

More specifically, as shown in Figs. 2 and 3 of **Brandt**, when an incident light beam 50 strikes a facet 21 of the polygon mirror 20 at different angles with respect to normal (i.e., 90°), the beam 50 reflects off the polygon mirror 20 at different angles (15°, 30°, and 45°). If reflectance varies over the angular range of incident light beam 50, then the intensity of the scanning beam will likewise vary across the planar array (see col. 5, line 62 – col. 6, line 16).

The objective of **Brandt** is to choose a thickness of a coating on the polygon mirror 20 that minimizes reflectance variations in a range of incident light beam scanning angles (col. 6, lines 40-46). In particular, Fig. 4 of **Brandt** illustrates a portion of a facet of a polygon shaped rotating mirror (e.g., 20, Fig. 2), the facet having a coating (such as SiO_2) designed to minimize reflectance variations in a range of incident light beam scanning angles (see, e.g., column 5, lines 45-54 and column 6, lines 40-47). A thickness T_1 of the coating is chosen to minimize variations in reflectance over a range of angular displacement of the mirror 20 in relation to a light source (see Abstract).

Moreover, as shown in Fig. 5 of **Brandt**, the optimum thickness is at around 100 nm and 180 nm (see col. 6, lines 48 -54). However, as can be seen from Fig. 5, the optimum thickness to minimize reflectance variation does not correspond to the maximum reflectance at any of the incident angles 15°, 30°, 45°.

Thus, according to **Brandt**, the coating on the polygon mirror is chosen *based on minimizing reflectance variations between different incident light beam angles*. Unlike **Brandt**,

the protective film recited in claim 7 is chosen to have maximum reflectance *based on a scanning angle at which a quantity of reflected light from the light retro-reflector is a minimum.*

Brandt is completely unrelated to providing a protective film having maximum reflectance at an angle of incidence of a scanning light of an optical scanning unit at which a quantity of light reflected by a retro-reflector is a minimum.

In view of the above-noted deficiencies of **Brandt**, the combination of **Caswell et al.** and **Brandt** does not result in the invention recited in claim 7.

New Claim 8:

New claim 8 has been added by the present Amendment. New claim 8 rewrites objected to claim 5 in independent form to place this claim in condition for allowance.

CONCLUSION

In view of the foregoing amendments and accompanying remarks, it is submitted that all pending claims are in condition allowance. A prompt and favourable reconsideration of the rejection and an indication of allowability of all pending claims are earnestly solicited.

If the Examiner believes that there are issues remaining to be resolved in this application, the Examiner is invited to contact the undersigned attorney at the telephone number indicated below to arrange for an interview to expedite and complete prosecution of this case.

In the event that any fees are due in connection with the filing of this paper, please charge any fees to Deposit Account No. 50-2866.

Respectfully submitted,

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WMS/lw/jl
Attachments: Fig. 3 of EP 0897161
Fig. 14 of present application
Replacement Drawing Sheet Fig. 14

AMENDMENTS TO THE DRAWINGS:

Please amend FIG. 14 in accordance with the attached Replacement Sheet to change reference element "15a" to "16".

FIG. 14